NEWS REPORT

W. D. Gardner

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NEWS REPORT

National Academy of Sciences *National Research Council*

VOLUME X *March–April 1960* NUMBER 2

The Highway Laws Research Project

DAVID R. LEVIN, *Secretary*
Committee on Highway Laws

FOR FOUR decades now, the Highway Research Board of the National Academy of Sciences–National Research Council has been fostering research into the physical, economic, administrative, and operations aspect of highway improvement. It was not until recently, however, that the Board has added the legal ingredient into its farflung research activities.

The elements which collectively might be identified as the legal ingredient comprise such things as basic authority to build and maintain a highway system of modern design, the melding of the highway into adjacent environment so that there is a minimum of disruption and a maximum of facility, a reconciliation of the uses of the highway with the uses of the adjacent lands, the acquisition and clearance of lands needed for right-of-way purposes, including compensation for severance wherever it might occur, and a host of other elements which necessarily are involved in the highway activity. This is a brief account of what progress has been made to date on highway laws research.

While substantial progress was being made in the fields of highway design, traffic engineering, soils and physical research, highway officials had been aware for some time that they were trying to build a highway system of modern design under horse-and-buggy laws. For example, the omission of two words in the highway code of a Midwestern State almost deleted 1,986 miles of the most important highways from the State highway system. This situation was temporarily rescued by an opinion of the State's Attorney General and recently by an appropriate revision of law. In another instance, examination of the aggregate of a State's highway laws revealed that roughly one-third of the laws still carried on the books were found to be inconsistent with later legislative enactments. Perhaps the prize specimen of antiquity, in a third State, was the provision for a fine of $20 for the offense of leaving horses attached to a carriage carrying passengers for hire without leaving the reins in the hands of some person to prevent the horses from running away. A final example is a State law that shackled the highway engineers with a limitation that no public road should have a width exceeding 66 feet, at a time when Congress was considering the Federal-aid Act of 1956 which contemplated expressway widths of up to 300 feet!

Confronted with these and other shortcomings, highway officials in 1952 decided

collectively to sponsor a thorough study of highway law. Such a project was set in motion by the Highway Research Board at the request of the American Association of State Highway Officials.

The Highway Laws Project operates under the general direction of the Committee on Highway Laws, the chairman of which is Louis R. Morony, Director of the Law Division, Automotive Safety Foundation. The committee is composed of outstanding individuals of State-wide and national reputation. It includes chief counsel of State highway departments, Federal officials, a law school professor, a state attorney general, several assistant attorneys general, a judge, several county and city officials, and others. The Project is also assisted by legal liaison representatives from each of the State highway departments. A technical staff of five lawyers, supported by three clerical employees, is researching highway law on a full-time basis.

The work of the Board's Highway Laws Project is accomplished in a variety of ways. Its principal activity is centered in a comprehensive analysis of the functional segments of State highway law. Additionally, monthly memoranda of limited scope are issued, involving new and current legal issues and developments. Assistance is also given to State highway departments and others on specialized subjects, pursuant to special request. Members of the Highway Laws Committee and Highway Laws Staff also participate, as requested, in public meetings of national, regional, or State-wide scope. Finally, the Laws Project has served to stimulate and develop legitimate and necessary interest in highway law, as part of the over-all highway activity. It has also provided a forum for analysis and discussion of current highway legal problems.

The Highway Laws Project is responsible for an increasingly extensive body of published material. Its first publication, issued in 1954, was entitled "Better Laws for Better Highways" (NAS–NRC Pub. 316). This document laid the groundwork for the development of the highway laws study as we know it today, and indicated the need for researching the vast body of developing law concerning highway activity.

The following year, the Laws Project published a document which has since become a classic, "Relocation of Public Utilities Due to Highway Improvement: An Analysis of Legal Aspects" (NAS-NRC Pub. 353). This was an exhaustive study of statutory and case materials dealing with the legal responsibilites for paying for public utility relocation necessitated by highway improvement. It was made available at a time when this issue was being debated by many interested persons, and was helpful to the Congress of the United States, many of the State legislatures, public and private attorneys, and many others.

Since legal problems were involved in the project, the Highway Laws Committee consulted with appropriate officials of the American Bar Association and the Commissioners on Uniform State Laws concerning the substance of the project and the general approach to be taken. Warm and sympathetic support by these groups was forthcoming.

Throughout its deliberations, the Highway Laws Committee has been sensitive to current needs in the realm of highway transportation. Accordingly, soon after the passage of the Federal-Aid Act of 1956, which recognized the National System of Interstate and Defense Highways on a scale never theretofore known, the Highway Laws group undertook to study the legal problems associated with the Interstate System. One of the most important features of the Interstate System is control of its access to abutting private property and intersecting roads and streets. In 1957, it published a study on control of highway access entitled "Expressway Law: An Analysis" (NAS–NRC Pub. 482).

Recognizing, too, that Congress had set up a long-range plan for the improvement of the Interstate System and that the acquisition of land in advance of actual use was a necessary adjunct of that plan, the Highway Laws staff undertook to gather and analyze legal and other related materials pertinent to the problem. This study was published as "Acquisition of Land for Future Highway Use: A Legal Analysis" (NAS–NRC Pub. 484).

That same year, at the annual meeting of the Highway Research Board, the Highway

Laws Committee sponsored a Symposium on Highway Law. It examined highway law from the standpoint of the city, county, State and Federal governments. The papers given at this meeting, together with a summary of important highway legal developments during 1957, were published as "Highway Laws" (NAS–NRC Pub. 437).

The Highway Laws Committee was aware that one of the most vexing problems involving highway modernization concerned the matter of acquiring the necessary lands. Accordingly, it designated land acquisition as having top priority. As a result, the first segment of this study was published in 1958 as "Condemnation of Property for Highway Purposes, A Legal Analysis: Part I" (NAS–NRC Pub. 547).

Incidently, it was also in 1958 that the Board of Governors of the American Bar Association adopted, upon the recommendation of its Committee on Commerce, the following resolution approving the purpose and program of the Board's Highway Laws Project:

Whereas, many of our highway laws were enacted during the pioneer stages of road building which posed few of the complex legal questions encountered today, and such laws contain inconsistencies and ambiguities, overlap, are inadequate in many respects for present day needs and require extensive revision to keep pace with the rapid modernization of our highway system;

Whereas, it is difficult for individual States acting alone to implement the expanded highway program provided in the Federal-Aid Highway Act of 1956, and it may be even more difficult for them individually to cope with further acceleration of the highway program provided for in more recent legislation; and

Whereas, the Highway Laws Project was organized several years ago under the auspices of the Highway Research Board, a unit of the National Academy of Sciences-National Research Council for the purpose of conducting a comprehensive study of highway laws of the 48 states in order to meet the above challenge, and said Project has completed some studies which highway officials and legislators are finding useful in improving law and procedure, and further studies are in varying stages of completion;

Whereas, a basic objective of the project is to preserve control of the highway laws in the various states and localities;

Now Therefore It Is Resolved that the American Bar Association approves in principle the above purposes and program of the Highway Laws Project and authorizes the Standing Committee on Commerce to continue its study of the work of the Project and to report developments to this Association from time to time.

Perhaps a word is in order here concerning the general format of these studies. Pursuant to the assigned responsibilities of the Committee on Highway Laws of the Board, the constitutions, statutes, and judicial decisions are isolated and analyzed, so that a composite view may be had as to what is now the law on a particular subject. From these materials and analyses, and in light of new needs as they emerge, an effort is made to identify the elements that should be considered for inclusion in an adequate body of highway laws.

The Highway Laws Project continued to research the land acquisition problem. The next segment of this work appeared in 1958 as "Condemnation of Property for Highway Purposes, A Legal Analysis: Part II" (NAS–NRC Pub. 603). This monograph was followed by a study of statutory declarations of legislative purpose in the highway field. These declarations contain the objective or intent of the legislatures in enacting a particular law. Accordingly, they are very important. An analysis of these laws and their elements are contained in "Legislative Purpose in Highway Law: An Analysis" (NAS–NRC Pub. 628).

At the 1958 annual meeting of the Highway Research Board, the Laws Committee sponsored an open meeting where a number of important current legal problems were aired, including control of highway access and the police power, the law and highway modernization, the program of legal research at the University of Wisconsin, and the progress of the Highway Laws Project. These materials and the annual report for that year were published as "Highway Laws —1958" (NAS–NRC Pub. 637).

About this time, the Federal-Aid Highway Act of 1958 was enacted. In it, the Congress enunciated a new policy with respect to outdoor advertising along the Interstate System. In connection with the provision, it quickly became essential to know what the present status of State law was with respect to outdoor advertising. The Highway Laws Project responded immediately and programmed a study of outdoor advertising legislation with top priority. The result of this study was the monograph "Outdoor

Advertising along Highways: A Legal Analysis" (NAS–NRC Pub. 630). The various types of state legislation dealing with outdoor advertising were included, and these in the aggregate are compared with the elements of the Federal law on the subject and with the national standards promulgated in connection with that law.

Again, at the January 1959 annual meeting of the Board, the Highway Laws Committee sponsored an open session that contained significant contributions to highway laws research. These included papers on the codification of Federal-aid legislation, how an attorney general views highway law, and two State highway law studies. These and a commentary on current legal developments involving the highway activity during the past year are being published by the Board under the title "Highway Laws—1959" (NAS–NRC Pub. 700).

Heavily involved in highway improvement programs is the matter of highway system classification. The Highway Laws Project has researched this aspect of highway law and has already published "Highway System Classification: A Legal Analysis, Part I" (NAS–NRC Pub. 638), dealing with the primary highway system. Generalized data, showing the relationship of the primary system in the States to other systems, are also included.

The Highway Laws Project also has assembled and analyzed all provisions in State highway codes relating to Federal aid for highway purposes. Provisions involving State assent to the Federal-aid highway program delegated authority to permit State cooperation in that connection, and related matters have been included. These have been published and are now available as "Federal Aid Provisions in State Highway Laws: An Analysis" (NAS–NRC Pub. 681).

Cutting across many of the daily activities of State and local highway departments is the matter of highway intergovernmental relationships. It is impossible these days, in the very nature of things, to modernize our highway system without the broadest kind of cooperation at all levels of government. This has been made the subject of an extensive study by the Laws Project, and the findings have been published as "Intergovernmental Relations in State Highway Legislation: An Analysis" (NAS–NRC Pub. 691).

Underlying the delegated authority to build and maintain highways in the public interest are the State and Federal constitutions. These organic documents have been analyzed too and reported upon by the Highway Laws Committee in a recent document entitled "State Constitutional Provisions Concerning Highways: A Legal Analysis" (NAS–NRC Pub. 692).

As I have already indicated, a supplemental activity of the Highway Laws Project is to issue brief monthly memoranda, setting forth the most important current court decisions, new legislation or related legal items. Since November 1953, when the first Laws Memorandum was issued, the Committee has sponsored 39 similar memoranda. There is good reason to believe that these timely releases are very helpful to State and local highway officials as well as many others.

The highway law reports already published and released have been enumerated in some detail. Other studies, undertaken by the Laws Project, are now in various stages of completion. The final segment of land acquisition law has been researched and reviewed by the Highway Laws Committee and the various State highway departments, and a final manuscript is now ready for the printers. Under the title "Condemnation of Property for Highway Purposes: A Legal Analysis, Part III" it will appear as Highway Research Board (HRB) Special Report No. 59. Through the years, a vast body of statutory and judge-made law has developed on the matter of highway contracts, and the accelerated highway program has further stressed the current importance of this subject. Accordingly, the Laws Project has just completed a comprehensive study on "Highway Contracts: A Legal Analysis" to be published shortly as HRB Special Report No. 57.

A variety of administrative forms of organization and management characterizes the highway activity of the Nation. The extent to which this has a legal foundation in State statutes has been researched by the Laws Project and a monograph on "Highway Administration" will be available soon for review. As indicated, Part I of the high-

way system classification has already been published, dealing with primary State highways. The other segments, involving secondary highway systems, country road systems, urban systems, township road systems, and miscellaneous systems, is being put together in report form and will soon be released for review under the title "Highway System Classification: A Legal Analysis, Part II." An outline for a study of maintenance and drainage law has been prepared, and the Project will undertake its analysis as soon as possible. Mindful of the current importance of the highway finance problem and the interest of Congress in factual information on the subject, the Project has also begun work on the law of highway finance.

In addition to the many subjects already researched or currently under investigation, there are other aspects of highway law that remain to be analyzed. These include traffic engineering; toll roads; budgeting, accounting, and reporting; public relations; design; construction; landscaping; size and weight regulation; and others. None of these are particularly voluminous in nature and, accordingly, should require only a minimum period to complete. It is the hope of the Highway Laws Committee that these studies in the main may be completed by the end of 1960. This effort completed, the Highway Laws Project will have accomplished the mission it originally set out to undertake, as it is understood by the Highway Research Board and the American Association of State Highway Officials.

It is apparent, that while progress has been made during the last 5 years through the operations of the Highway Laws Project, much remains yet to be done. To reap the full benefits from the expenditures already made in this field and to supply a current need, the material already developed must be kept up to date. Moreover, the many components of the study that were developed more or less individually should be coordinated and reconciled with each other. The derivation of model legislation by the responsible highway officials seems a logical next step.

SCIENCE NEWS

ANNUAL MEETING NATIONAL ACADEMY OF SCIENCES

The ninety-seventh annual meeting of the National Academy of Sciences will take place at the Academy, April 25–27. Scientific papers will be presented on Monday, April 25, and Wednesday, April 27. The Academy will meet in business session on Tuesday to elect officers and new members and to discuss general Academy affairs.

The scientific sessions on Monday and Wednesday will include 37 contributed papers in a variety of fields. In addition, four symposia of invited papers will be presented on the following subjects: *1*) nuclear processes in stars and supernovae, Monday morning; 2) current investigations on the brain and behavior, Monday afternoon; 3) genetic determination of protein structure, Wednesday morning; and 4) solar emissions and the interplanetary medium, Wednesday afternoon. The symposium on solar emissions and the interplanetary medium, arranged in cooperation with the American Geophysical Union, will continue at the Academy building on Thursday, April 28, the first day of the annual meeting of the American Geophysical Union.

A number of Academy medals will be presented on Monday evening in ceremonies which will be followed by a reception for the medalists, members of the Academy, and their guests. Scientific demonstrations and exhibits will be on display during the reception.

The Academy dinner will be held on Tuesday evening at the Sheraton–Park Hotel. The President's reception for the members and their guests will immediately precede the dinner.

NATIONAL RESEARCH COUNCIL ANNUAL MEETING

The third meeting of the National Research Council as a body took place at the Academy–Research Council, March 24–26. It was devoted to three major topics of current scientific and national interest.

The meeting opened on Thursday afternoon, March 24, with a review by Detlev W. Bronk, President of the National Academy of Sciences, of highlights of the activities of the Research Council since its annual meeting a year before. The Thursday afternoon session then continued with a discussion of Dynamics of Natural Resources, led by an invited panel under the chairmanship of Paul Weiss, professor at the Rockefeller Institute.

After a reception and buffet dinner, the evening session on Thursday was devoted to the consideration of Grants and Fellowships as Factors in the Development of Scientists. Paul M. Gross, Vice President of Duke University, was chairman of the discussion panel.

The topic at Friday morning's session was Transportation and Patterns of Living, under the chairmanship of Harmer E. Davis, Director of the Institute of Transportation and Traffic Engineering, University of California at Richmond.

The eight divisions of the Research Council held separate meetings on Friday afternoon to review their programs of the past year, to plan for the coming year, and to consider the three major topics listed above as they related to division activities.

The final plenary session was held on Saturday morning, March 26, when the discussions of the previous sessions were summarized, and the views of many individual members of the Research Council were presented. Comments and recommendations for the consideration and guidance of the officers of the Research Council were brought together at this session.

SECTION OF GEOLOGY

The Section of Geology of the Academy met at Princeton, N.J., March 7–8, to discuss the status of the geological sciences and the broad needs and opportunities for research in geology and related fields. A number of well-defined conclusions were reached, which will be the subject of a report that is now in preparation.

This meeting resulted in part from a suggestion by Wendell P. Woodring, Chairman of the Section of Geology, and in part from a request addressed to President Bronk by George B. Kistiakowsky, Chairman of the Federal Council for Science and Technology, that the Academy undertake to review the status and broad needs of science for the benefit of the Federal Council.

It is anticipated that similar meetings of other Sections will be held in the coming months.

BUILDING SCIENCE EDUCATION FUND

A new Building Science Education Fund was established by the Academy–Research Council on the recommendation of the Board of Governors of the Building Research Institute (BRI) to stimulate a program to encourage highly creative persons to pursue building research activities in colleges and universities.

Impetus for establishment of the fund came from the BRI Education Liaison Committee under the chairmanship of Harold D. Hauf, Rensselaer Polytechnic Institute, who has been working closely with college and university faculty members throughout the country to interest them more actively in building research. It is anticipated that the $2,000 initial appropriation for the fund will be supplemented by grants from organizations within the industry.

FOOD AND NUTRITION BOARD

The 57th meeting of the Food and Nutrition Board was held at the Academy–Research Council building, April 1 and 2, with Grace A. Goldsmith, Chairman of the Board, presiding.

Cyril Comar, School of Veterinary Medicine of Cornell University, presented a comprehensive report on radionuclides in the food supply, approaching the subject from three aspects: food surveys, movement of radionuclides in the food chain, and the effects on the population. Agencies engaged in making surveys in the

United States and in Great Britain were mentioned and their methods compared. World aspects of the problem and the relevant work of international agencies were discussed. Information available to the public and to scientists was listed, and suggestions were offered for consideration in developing other survey programs.

William J. Darby, Vanderbilt School of Medicine, announced an intersociety symposium on problems of toxicology, arranged by the Food Protection Committee, the Committee on Toxicology, and the Study Section on Toxicology of the National Institutes of Health; and cosponsored by the Society of Pharmacology and Experimental Therapeutics and the American Institute of Nutrition. This will be a part of the program of the April meeting of the Federation of American Societies for Experimental Biology.

W. H. Sebrell, Jr., Institute of Nutrition Sciences of Columbia University, announced the plans for an International Conference on Protein Malnutrition under the leadership of the Committee on Protein Malnutrition. This has been made possible by a grant to the Board from the National Institutes of Health. The conference will be held in Washington, D.C., August 20–24, just preceding the Fifth International Congress on Nutrition. The program will be built around the grantees who have received assistance from the committee and the sessions will be restricted to participants.

C. Glen King, Nutrition Foundation, Inc., and Paul György, Philadelphia General Hospital, described the practically completed plans for the Fifth International Congress on Nutrition to be held in Washington, D. C., September 1–7.

The Committees on Amino Acids, Dietary Allowances, Food Protection, Infant Nutrition, International Nutrition Programs, Milk, Nutrition Education, Nutritional Studies at Elgin State Hospital, and Protein Malnutrition presented reports on the work completed and plans for future activities.

In addition, liaison representatives and guests reported on the work of the following agencies:

Nutrition Study Section of the National Institutes of Health, by J. A. Uram, Executive Secretary

Council on Foods and Nutrition of the American Medical Association, by Philip L. White, Secretary

Interdepartmental Committee on Nutrition for National Defense, by Arnold E. Schaefer, Executive Director

United Nations Childrens' Fund (UNICEF), by L. J. Teply, Chief, Expanded Nutrition, UNICEF

Pan American Health Organization, by M. E. Wegman, Regional Representative of World Health Organization.

At the dinner meeting on April 1, Wendell H. Griffith, Vice Chairman of the Board, spoke on "Opportunity in India." This was an illustrated presentation of his work as a Food and Agricultural Organization adviser in India during 1959.

BUILDING RESEARCH ADVISORY BOARD SOIL FILLS STUDY

A contract between the Federal Housing Administration and the Academy–Research Council provides for a nationwide study of soil fills for single and multi-story residential properties to be undertaken by the Building Research Advisory Board. The two specific considerations of the study will be *1*) the design and construction of proposed non-hydraulic soil fills, and the evaluation of the underlying soils to support fills; and 2) the evaluation of existing non-hydraulic and hydraulic soil fills including the underlying soils to support fills. Additional information about the study may be obtained from Joseph Wilkes, Project Director, Building Research Advisory Board.

BUILDING RESEARCH INSTITUTE SPRING CONFERENCES

The 1960 Spring Conferences of the Building Research Institute (BRI), held in New York City, April 5–7, drew a near capacity attendance of almost 600 engineers, architects, builders, product and materials manufacturers, educators, and research and technical specialists from throughout the country.

Major technical programs were conducted on paints, adhesives, and masonry cavity walls. Sessions were also held on operation and maintenance costs; air cleaning and

purification in buildings; college and university research projects; and proposals for new building research. A plastics information workshop was also conducted. The Building Research Institute held its ninth annual meeting concurrently with the Conferences.

At a special luncheon on Wednesday, April 6, Norman P. Mason, Administrator of the Housing and Home Finance Agency, received the first annual F. Stuart Fitzpatrick Memorial Award. The award, a silver medallion and a scroll, was presented by Leon Chatelain of the American Institute of Architects, finance chairman of BRI.

HUMAN PROBLEMS AND USE OF FALLOUT SHELTERS

The Disaster Research Group sponsored a Symposium on Human Problems in the Utilization of Fallout Shelters on February 11 and 12 at the Academy–Research Council building. Among the sixty invited participants attending the two-day sessions were one from West Germany and one from Sweden. John K. Hemphill, Educational Testing Service, served as chairman.

The program included 20 invited papers, and each day's sessions were followed by panel comments and discussions. One session was devoted to background research, a survey of some related experiences. This included such topics as "Studies of Submarine Habitability and Human Adjustment to Polar Isolation: Their Implications for Living in Fallout Shelters," and "Generalizations from Sensory Deprivation to Fallout Shelters."

At another session, participants heard about the shelter programs of Sweden and West Germany and the Soviet civil defense program. Current research problems were discussed at both the third and fourth sessions and included such subjects as "The Implications of Food Acceptability for Shelter Occupancy," and "Public Reaction to the Unscheduled Sounding of Air-Raid Sirens in a Metropolis."

The Disaster Research Group is planning to publish the Proceedings of the Symposium in the regular Academy–Research Council series of publications.

MARITIME RESEARCH ADVISORY COMMITTEE

The Maritime Research Advisory Committee plans to complete its work and issue its final report to the U. S. Maritime Administration before September of this year.

Four of the six advisory panels have submitted their final recommendations, and the others are in the final stages.

The report of the summer study group on the wartime use of the U. S. Merchant Marine, the so-called Walrus Report, has been published and has received widespread distribution.

A special ad hoc group has been appointed to study and advise on methods for the establishment of one or more maritime research centers in the United States. Such centers would probably be located at one of the large colleges which offer courses in naval architecture and marine engineering. This group has sponsored two conferences and has created considerable interest in the marine field. The first conference brought together the country's outstanding maritime researchers; the second, a representative group of maritime industrialists. The ad hoc group expects to complete its report by mid-April.

MATERIALS RESEARCH

Materials research programs in the United States require significant strengthening at every level of activity before existing inadequacies can be corrected. This was a finding of the Committee on the Scope and Conduct of Materials Research, contained in a report issued March 23.

After a year-long study the 14-man Committee concluded there is a lag in the development of new metals, ceramics, and plastics, which is holding up the development of nuclear-propulsion systems and space vehicles, better missiles, rocket motors, naval vessels, and electronic devices for which theoretical designs already exist. The report cites the lack of available materials to withstand the severe temperature, pressure, radiation, corrosion, and stress environments now demanded of high-performance end-items as a factor in what is termed the "materials barrier."

The Committee, under the chairmanship of Clyde C. Williams, formerly president and director of Battelle Memorial Institute, made the following general recommendations to strengthen materials research programs:

1) Greater centralization of responsibility, more support for and more effective coordination of Government-sponsored materials research and development programs;
2) Government incentives to encourage research and development of new and improved materials;
3) Assurance of adequate U.S. supplies of every chemical element or material to support full production and use of new and improved materials;
4) Improvement and acceleration of the dissemination of research information; and
5) Strengthening of the universities in their dual role of training scientists and engineers and also of doing basic research.

MODERNIZED LONGSHORE WORK METHODS TESTED

Scientists and engineers of the Maritime Cargo Transportation Conference, in cooperation with the U.S. Navy, tested modernized longshore work methods at the Oakland, Calif., Naval Supply Center in early February. The tests, an attempt to learn what can be done to improve production and to reduce waterfront cargo handling costs, are part of a continuing project started two years ago in the San Francisco Bay area. The project is subjecting turnaround time of general cargo ships to scientific study.

Systems developed during the past two years and believed to be capable of doubling present-day cargo handling production were tested on-the-job at Oakland. The tests included new work methods employing the latest powered handling equipment, and an almost complete reorganization of work patterns and job assignments.

Physiologists from the University of California at Los Angeles undertook to measure energy expenditure levels of workmen taking part in the tests to ensure if any production gains were the results of new systems rather than from increased physical exertion by the labor force.

VISITING RESEARCH SCIENTISTS PROGRAM

The final group of awards under the expanded Visiting Research Scientists Program, which the Academy–Research Council is administering for the International Cooperation Administration, has been made. A total of 134 grants have been awarded under the present phase of the program.

The following list gives the name and country of origin of the recipients in this last group as well as the field and location of their research:

From Argentina:

Jorge Wright, Botany—National Fungus Collections, Beltsville, Md., with John A. Stevenson

From Australia:

Kenneth McCracken, Physics—Massachusetts Institute of Technology, with Bruno Rossi

From Austria:

Mechtilde Brandenstein, Spectrochemistry—Philips Laboratories, with William Parrish

From Brazil:

Hêni Sauaia, Zoology—University of California at Berkeley, with Daniel Mazia

From Chili:

George Hodgson, Biology—California Institute of Technology, with H. Borsook

From Colombia:

Rafael Bravo, Genetics—Michigan State University, with Fred C. Elliott

From Ecuador:

Pablo Martinod, Biochemistry—Vanderbilt University, with William J. Darby

From Egypt:

A. M. El-Tabey Shehata, Food technology—Massachusetts Institute of Technology, with S. Goldblith

Ezz Eldin Taha, Enzyme chemistry—University of Wisconsin, with Stanley G. Knight

Mohamed Moheb M. Zaki, Entomology—University of California at Riverside, with R. L. Metcalf

From Germany:

Heinz Duddeck, Engineering—Stanford University, with Wilhelm Flugge

Ulrich Jux, Paleontology—Louisiana State University, with A. E. Sandberg

Anita Menger, Biochemistry—University of Minnesota, with W. F. Geddes

W. K. Mundry, Botany—California Institute of Technology, with R. Dulbecco

From Greece:

John Danezis, Medical science—Mt. Sinai Hospital, with Alan F. Guttmacher
Andreas Gregory Galinos, Chemistry—New York University, with T. W. Davis
John M. Kalovoulos, Soil science—University of Illinois, with J. E. Gieseking
Leonidas G. Liacos, Forestry—University of California at Berkeley, with H. H. Biswell
Zefi Sandalaki, Physics—Pennsylvania State University, with Ray Pepinsky

From Iceland:

Gunnar Sigurdsson, Hydraulics—University of California at Berkeley
Gudmundur E. Sigvaldason, Petrology—U. S. Geological Survey, with George Faust

From India:

Gangadhar V. Bhide, Chemistry—Harvard University, with R. H. Woodward
M. K. Gharpurey, Chemistry—Johns Hopkins University, with Paul H. Emmett
Govind Vishnu Joshi, Botany—University of Southern California, with Paul Saltman
Ajit Kumar Maiti, Physiology—University of Michigan, with L. A. Woods
Sivatosh Mookerjee, Embryology—The Rockefeller Institute, with Paul Weiss
Uttman Prakash, Botany—Harvard University, with Elso S. Barghoorn
Arun Kumar Saha, Engineering—Pennsylvania State University, with A. H. Waynick

From Indonesia:

Robert T. Pang, Medical science—Mt. Sinai Hospital, with Hans Popper

From Iraq:

Youssef Al-Attar, Chemistry—University of Minnesota, with Walter Lauer
Ghazi Hamdi, Chemistry—University of Wisconsin, with A. L. Wilds
Jamil Malaika, Engineering—Washington State University, with E. W. Greenfield

From Israel:

Martin Halmann, Chemistry—Brookhaven National Laboratory, with R. Christian Anderson

From Italy:

Ettore Fiorini, Physics—Duke University, with Martin Block
Teresa Fortini, Astronomy—University of Colorado, with Walter Orr Roberts
Roberto Moccia, Chemistry—University of Chicago, with R. S. Mulliken
Nello M. Onesto, Engineering—Massachusetts Institute of Technology, with Walter A. Rosenblith
Guiseppe Zerbi, Chemistry—University of Minnesota, with Bryce Crawford, Sr.
Guilio Cesare Emaldi, Dairy science—Cornell University, with F. U. Kosikowski
M. Ferro-Luzzi, Physics—University of California at Berkeley, with Luis W. Alvarez
Michele Sce, Mathematics—University of Chicago, with Saunders Mac Lane
Alberto M. Simonetta, Zoology—Smithsonian Institution, with Herbert Friedmann

From Korea:

Young Nok Kim, Physics—University of Washington, with Lawrence Wilets

From Lebanon:

Joseph M. Butros, Embryology—California Institute of Technology, with Albert Tyler

From the Netherlands:

Arend W. Noltes, Chemistry—Massachusetts Institute of Technology, with Herbert O. House

From Norway:

R. Sundby, Zoology—University of California at Riverside, with C. P. Clausen

From Pakistan:

Mohammed Maqsood, Physiology—Donner Laboratory, University of California at Berkeley, with John H. Lawrence
C. M. Aslam, Cytogenetics—Indiana University, with M. M. Rhoades
S. H. Z. Naqui, Biochemistry—Connecticut Agricultural Experiment Station, with James G. Horsfall

From Peru:

Isaac Cirón, Chemistry—National Bureau of Standards, with E. Wichers
Fernando de las Casas, Geology—University of Wisconsin, with E. N. Cameron

From South Africa:

Maurice Kaplan, Engineering—National Bureau of Standards, with Douglas E. Parsons
Stanley John Powell, Parasitology—Tulane University, with J. C. S. Paterson

From Spain:

Eduardo Vioque, Chemistry—University of Minnesota, with Ralph T. Holman

From Sweden:

Göran Claeson, Chemistry—University of California at Berkeley, with Melvin Calvin
Ernst L. Thal, Bacteriology—University of California at Berkeley, with S. S. Elberg

From Uruguay:

Marcos Besson, Agricultural engineering—Iowa State College, with F. F. Riecken

From Viet Nam:

Le Xuan Chat, Hematology—New England Center Hospital, with William Dameshek
Dô Bá Khê, Physics—University of Wisconsin, with R. Rollefson

PEST CONTROL-WILDLIFE RELATIONSHIPS

A Conference of Pest Control-Wildlife Relationships was held at the Academy–Research Council on January 15. The participants heard a report from an ad hoc

committee established to consider the challenge to public welfare of chemical pest control without irreparable damage to wildlife.

The committee noted that some of those responsible for control programs tend to minimize the potentially injurious effects of the chemicals they use, whereas some of those responsible for conservation tend to maximize the damage in their domain. In nearly every case, the committee suggested, there may be a happy medium in which effective plant protection can be obtained without lasting damage to useful animals.

Participants heard the following background statements by committee members:

"Wildlife-Pesticide Needs," Ira N. Gabrielson, Wildlife Management Institute

"Relationship of Pesticides to Wildlife—The Viewpoint of Agriculture," E. F. Knipling, U.S. Department of Agriculture

"Pesticides in Relation to Public Health," Wayland J. Hayes, Jr., U. S. Department of Health, Education, and Welfare.

The meeting was then opened for discussion by the chairman, Herbert E. Longenecker, University of Illinois. An informal vote showed unanimous agreement in favor of establishing a standing Academy–Research Council committee on pest control-wildlife relationships.

STAFF APPOINTMENTS

The Division of Earth Sciences has announced the appointment of **Adrian F. Richards** as Acting Executive Secretary of the Division until July of this year. Dr. Richards received his Ph.D degree in oceanography from the University of California in 1957. His special interest is in the field of vulcanological oceanography and he is currently on leave from the U. S. Navy Hydrographic Office.

The Division of Physical Sciences has announced the appointment of **James R. Devoe** to conduct a survey of the problem of radio-active contamination of materials for the Subcommittee on Radiochemistry. This work, which will require about one year to complete, is supported by the U. S. Atomic Energy Commission. Dr. Devoe received his Ph. D. degree in radiochemistry from the University of Michigan in 1959.

Edward L. Katzenbach, Jr., has been appointed Executive Secretary of *Project Poseidon*, a study group that met in Jacksonville, Fla., March 18–27, to discuss long-range planning with the Department of the Navy. Dr. Katzenbach received his Ph.D. degree in history from Princeton University in 1953. He served in the U. S. Marine Corps in both World War II and the Korean War. In 1958 he joined the staff at Brandeis University as Director of Academic Research.

The Mine Advisory Committee announces the appointment of **William O. Rainnie** as Technical Assistant. A graduate of the U. S. Naval Academy, Mr. Rainnie was affiliated with Fairbanks Morse Company before coming to the Academy–Research Council.

FELLOWSHIP PROGRAMS

NATIONAL SCIENCE FOUNDATION FELLOWSHIPS

For the ninth year the Fellowship Office of the Academy–Research Council has assisted the National Science Foundation (NSF) by receiving and evaluating applications for graduate and postdoctoral fellowships for the academic year 1960–61.

This year, 4,696 applications for graduate fellowships were reviewed by eight graduate fellowship evaluation panels selected by the Academy–Research Council. The panels met at the Academy–Research Council building, February 16–18, and the final Graduate Evaluation Board met on February 19. From the list of 1,358 applicants recommended, 1,200 graduate fellowships were awarded by the NSF on March 15.

The Fellowship Office again assisted the NSF with two graduate fellowship programs inaugurated in 1959—the Cooperative Graduate Fellowships and Summer Fellowships for Graduate Teaching Assistants. During the week of February 22–26,

eight panels, also assembled by the Academy–Research Council, evaluated 3,091 applications for Cooperative Graduate Fellowships and 1,362 applications for Summer Fellowships for Graduate Teaching Assistants. The final awards will be made by the participating universities.

POSTDOCTORAL FELLOWSHIPS IN PETROLEUM RESEARCH

Two appointments for postdoctoral fellowships in the field of petroleum research have been made for 1960–61. These postdoctoral fellowships, established by the American Chemical Society and supported by its Petroleum Research Fund, are administered by the Fellowship Office of the Academy–Research Council.

Clarence E. Cook, University of North Carolina, received the award in chemistry and will pursue his fellowship at the University of Cambridge, England, under Alexander Todd. Richard S. Fiske was awarded the fellowship in geology and will study at the Imperial University of Tokyo with H. Kuno.

RESEARCH ASSOCIATESHIPS IN NATURAL SCIENCES

Twenty-nine applications were received and reviewed by the Fellowship Office for Postdoctoral Resident Research Associateships tenable at various government laboratories and certain research centers with the Air Research and Development Command. Seventeen candidates were certified to the National Bureau of Standards; 1 to the Naval Ordnance Laboratory; 1 to the Navy Electronics Laboratory; 2 to the Naval Research Laboratory; 2 to Air Force Cambridge Research Center; and 2 to Wright Air Development Center.

Thirty-five applications were received and reviewed for Postdoctoral University Associateships tenable at 26 universities in the United States and supported by the U.S. Air Force Office of Scientific Research. Thirty-four were certified and of this number 9 have been offered appointments.

FELLOWSHIPS IN THE NATURAL SCIENCES

One of the predoctoral fellowships awarded last year has been renewed for 1960–61, and two new awards have been made. These predoctoral fellowships were established by the Leeds and Northrup Foundation to give advanced training to outstanding young scholars in the fields of chemistry and physics and are administered by the Fellowship Office of the Academy–Research Council.

The following list gives the name of the recipient, the institution from which he received his degree, and the nature and location of his fellowship research:

George B. Hess (A.B., Princeton University, 1958)
Graduate work in physics—Stanford University, with W. M. Fairbank (second renewal)

Robert T. Moore (B.A., Swarthmore College, 1960)
Graduate work in theoretical physics—Princeton University

Martin Pomerantz (B.S., City College of New York, 1959)
Graduate work in organic chemistry—Yale University, with W. von E. Doering

RECORD OF MEETINGS

January	
5	Committee on Inter-American Scientific Cooperation
6	Highway Research Board, Special Publication Committee
7	U. S. National Committee, International Geophysical Year
8	Maritime Research Advisory Committee, Ad hoc Conference on a New Maritime Research Center
	Space Science Board, Ad hoc Committee to Study Project Needles
9	Division of Chemistry and Chemical Technology, Executive Committee
	Committee on Sarcoidosis
11	Division of Biology and Agriculture, Screening Committees for Travel Grants to Participants in International Congresses on Cell Biology, Embryology, Histochemistry, and Photobiology

January	
11–12	Committee on Drug Addiction and Narcotics, *Philadelphia*
11–15	Highway Research Board, Annual Meeting
12	Committee on Transportation of Laboratory Animals, *Maywood, N. J.*
	Ad hoc Committee on Needs in Field of Induced Environments
	AASHO Road Test Special Committee on Publication
12–13	Ad hoc Subcommittee Advisory to Prevention of Deterioration Center on Induced and Operational Environments
13	AASHO Road Test Maintenance Panel
14	AASHO Road Test Rating Panel
	Committee on International Exchange of Persons, Washington Members
	Committee on Veterans Medical Problems
	U. S. National Committee, International Union of Biochemistry
	Federal Construction Council, Committee on Construction Practices
15	AASHO Road Test Bridge Panel
	Conference on Pest Control and Wildlife Relationships
	Subcommittee on Radiobiology
	Maritime Research Advisory Committee, Panel on Ship Operations, *New York City*
16	U. S. National Committee, International Union of Nutritional Sciences
	AASHO Road Test National Advisory Committee
17	Committee on Atmospheric Sciences, *Hartford, Conn.*
18	Committee on the Cutaneous System
18–19	Medical Fellowship Board
18–22	International Union on Theoretical and Applied Mechanics, Conference on Magneto Fluid Dynamics, *Williamsburg, Va.*
19	Committee on International Exchange of Persons, Washington Members
	Armed Forces–National Research Council Committee on Vision, Working Group 8 on Planning a Classified Visual Search Symposium
20	Federal Construction Council, Task Group on Soil Compaction
	Organizing Committee for National Conference on Scientific Manuscripts

January	
21	Subcommittee on Pesticides, *Miami Beach*
21–22	Screening Committee for Postdoctoral Fellowships in Physical Sciences
	Screening Committee for Postdoctoral Fellowships in the Medical Sciences
	Screening Committee for Postdoctoral Fellowships in Mathematics
	Screening Committee for Postdoctoral Fellowships in Chemistry and Chemical Engineering
	Screening Committee for Postdoctoral Fellowships in Biology and Agriculture
22	Screening Committee for Postdoctoral Fellowships in Anthropology and Psychology
	Advisory Committee on Civil Defense, Special Working Group on Citizens' Instrument
	Maritime Research Advisory Committee, Panel on Naval Architecture and Marine Engineering, *New York City*
	Screening Committee for Postdoctoral Fellowships in the Earth Sciences
	Screening Committee for Postdoctoral Fellowships in Engineering and Industrial Research
23	Academy–Research Council Committee for Evaluation of Postdoctoral Fellowships in the Life Sciences and Physical Sciences
24	Committee on Oceanography
	Academy–Research Council Postdoctoral Fellowship Board
25	Committee on Hand Functioning and Handwear, *Natick, Mass.*
	Committee on International Scientific Unions
26	U. S. National Committee, International Union of Crystallography
26–27	Armed Forces–National Research Council Committee on Vision, Working Group 6 on Visual Displays
27	Office of Scientific Personnel, Advisory Committee
	Committee on Inter-American Scientific Cooperation
	Committee on Survey of Medical Research in the Veterans Administration
28	Division of Mathematics, Executive Committee, *Chicago*
	Committee on Editing *Mathematics of Computation*, at *Chicago*

January	
28	Planning Group for Rh Conference
29	Committee on Blood and Related Problems and Subcommittee on Transfusion Problems, Joint Meeting
	Division of Mathematics, Committee on Regional Development, *Chicago*
	Division of Mathematics, Committee on Travel Grants, *Chicago*
	Federal Construction Council, Committee on Specifications and Working Drawings, Their Interpretation and Clarification
29–30	Committee on Fruit and Vegetable Products, *San Francisco*
31	Advisory Committee for Survey of Apparatus for Science Teaching
February	
1	Armed Forces–National Research Council Committee on Vision, Working Group 11 on Policies for Publication
	Subcommittee on Radiochemistry, *Tallahassee*
2	Nuclear Data Project
4	Committee on Shock
5	Committee on Trauma
	Ad hoc Cooperative Ultraviolet Light Study Group
5–6	Committee on Infant Nutrition
6	Division of Earth Sciences, Executive Committee
7	National Academy of Sciences–National Research Council, Governing Board
8–10	Advisory Committee on Civil Defense, Conference on Environmental Engineering in Protective Shelters
9	Building Research Institute, Programs Committee
10	Building Research Institute, Paints and Coatings Committee
	Committee on Protein Malnutrition, *New York City*
10–11	Advisory Board on Quartermaster Research and Development, *Natick, Mass.*
11	Building Research Institute, Subcommittee on Documentation
	Committee on International Exchange of Persons, Washington Members
11–12	Symposium on Human Problems in the Utilization of Fallout Shelters
12	Maritime Research Advisory Committee, Panel on Future Requirements, *Evanston, Ill.*
13	Consultant Panel on Shelter Habitability

February	
15	Committee on International Exchange of Persons, Washington Members
	Maritime Research Advisory Committee, *New York City*
	Graduate Fellowship Evaluation Board
	Agricultural Research Institute, Conference Committee
16	Building Research Institute, Nominating Committee, *New York City*
	Building Research Institute, Research Proposal Screening Committee, *New York City*
	Maritime Research Advisory Committee, Ad hoc Conference on a New Maritime Research Center, *New York City*
	Maritime Cargo Transportation Conference, Industry Advisory Committee, Management Section, *San Francisco*
16–18	Graduate Fellowship Evaluation Panels
17	Building Research Institute, Research Committee, *New York City*
17–18	Food Protection Committee
18	Plastics Study Group, Program Task Group, *Cleveland*
	Committee on Fire Research
18–19	Food Protection Committee, Industry Committee
19	Building Research Institute, Finance Committee
	Committee on Inter-American Scientific Cooperation, Section on Brazil, *New York City*
	Graduate Fellowship Evaluation Board
	Committee on Radiology
19–20	Subcommittee on Thermal Factors in Environment, *Camp Lejeune, N. C.*
20	U. S. National Committee, International Union on History and and Philosophy of Science, *New York City*
22	Board for Cooperative Graduate Fellowship Programs
	Space Science Board, Committee on Ionospheres of the Earth and Planets
23	Maritime Cargo Transportation Conference, Industry Advisory Committee, Labor Section, *San Francisco*
23–25	Panels for Cooperative Graduate Fellowship Programs

February	
24	Committee on Survey of Medical Research in the Veterans Administration
24–25	Armed Forces–National Research Council Committee on Vision, Working Group 6 on Visual Displays
25	Maritime Cargo Transportation Conference, Academic Advisory Committee, *San Francisco*
	Institute of Laboratory Animal Resources, Executive Committee
25–26	Ad hoc Subcommittee on Radiation Shielding, *San Francisco*
	Committee on Nutrition, *Chicago*
February	
26	Committee on International Exchange of Persons, Washington Members
	Committee on Mathematics Advisory to the Office of Naval Research, *New York City*
	Committee on Ship Steel, Advisory Committee for Project SR-153
	Subcommittee on Measurements and Standards of Radioactivity
27	Ad hoc Committee on Information Center on Pure Chemical Compounds
27–28	Committee on Oceanography
29	Subcommittee on Waste Disposal

NEW PUBLICATIONS

American Geological Institute. *Directory of Geoscience Departments in the Colleges and Universities of the United States and Canada.* Washington, 1960. (American Geological Institute, AGI Report 11, 1960 Edition.) 117 p. $2.00.

American Geological Institute. *Survey of Geology-Geophysics Students in the Colleges and Universities of the United States and Canada in 1958–59.* Washington, 1959. (American Geological Institute, AGI Report 12, 1959 Edition.) 23 p.

Armed Forces–NRC Committee on Vision. *Visual Search Techniques, Proceedings of a Symposium . . . Held in the Smithsonian Auditorium, Washington, D.C., April 7 and 8, 1959. Edited by Ailene Morris and E. Porter Horne.* Washington, 1960. (NAS–NRC Publication 712.) 256 p., illus. $3.00.

Beard, Harold C. *The Radiochemistry of Arsenic.* Washington, NAS–NRC, Committee on Nuclear Science, 1960. (Nuclear Science Series; [Report No. 30-2]) 27 p. $0.50. (Available from: Office of Technical Services, Dept. of Commerce, Washington 25, D.C.)

Butler, Joseph H. *Manufacturing in the Concepcion Region of Chile; Present Position and Prospects for Future Development.* Washington, 1960. (NAS–NRC, Division of Earth Sciences, Foreign Field Research Program Report No. 7.) 106 p. $2.50.

Conference on Opportunities and Needs for Field Research on the Biology of Primates in Tropical Africa. *Summary of Meeting, 4–5 December 1959, at the National Academy of Sciences, Washington, D.C. Sponsored by the New York Zoological Society.* New York, 1960. 20 p.

DeVoe, James R. *The Radiochemistry of Cadmium.* Washington, NAS–NRC, Committee on Nuclear Science, 1960. (Nuclear Science Series; [Report No. 30-1]) 57 p. $0.75. (Available from: Office of Technical Services, Dept. of Commerce, Washington 25, D.C.)

Garriott, O. K. *The Determination of Ionospheric Electron Content and Distribution from Satellite Observations.* Washington, NAS–NRC, 1960. (NAS, IGY World Data Center A, Rockets and Satellites. IGY Satellite Report No. 10.) 65 p. $1.00.

Govan, Francis A. *High-Temperature Water for Heating and Light-Process Loads.. Report . . . for the Federal Construction Council by Task Group T-39.* Washington, NAS–NRC, Building Research Advisory Board, 1959. (NAS–NRC Publication 753. Federal Construction Council, Technical Report No. 37.) $2.00.

Howard, F. T., *ed. Sector-Focused Cyclotrons. Proceedings of an Informal Conference, Sea Island, Georgia, February 2–4, 1959.* Washington, 1959. (NAS–NRC Publication 656. Committee on Nuclear Science, Nuclear Science Series; Report No. 26.) 291 p., illus. $2.50.

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Jones, L. M., *et al. Upper-Air Densities and Temperatures from Eight IGY Rocket Flights by the Falling-Sphere Method.* Washington, NAS–NRC, 1959. (NAS, IGY World Data Center A, Rockets and Satellites. IGY Rocket Report Series No. 5). 30 p., 68 figures. $1.00.

Michel, Aloys Arthur. *The Kabul, Kunduz, and Helmand Valleys and the National Economy of Afghanistan. A study of Regional Resources and the Comparative Advantages of Development.* Washington, 1959. (NAS–NRC, Division of Earth Sciences, Foreign Field Research Program Report No. 5.) 441 p. $3.50.

National Academy of Sciences. *Biographical Memoirs, Volume XXXIV.* New York, Columbia University Press, 1960. 367 p. $5.00.

National Academy of Sciences. IGY World Data Center A. *Interim Catalogue of Data in IGY World Data Center A.* Washington, NAS–NRC, 1959. (IGY General Report Series No. 7.) 169 p. $1.00.

National Academy of Sciences. Special Advisory Committee on the Role of the Department of Commerce in Science and Technology. *The Role of the Department of Commerce in Science and Technology, a Report to the Secretary of Commerce . . .* Washington, NAS–NRC, 1960. 157 p. (Available from: Dept. of Commerce, Washington 25, D.C.)

National Research Council. Building Research Institute. *Building Illumination; the Effect of New Lighting Levels. A Research Correlation Conference . . . May 20–21, 1959, Cleveland, Ohio.* Washington, 1959. (NAS–NRC Publication 744.) 93 p., illus. $5.00.

National Research Council. Committee on Agricultural Pests. *Losses Due to Agricultural Pests. Conference Summary . . . November 4–5, 1959.* Washington, NAS–NRC, 1960. 19 p.

National Research Council. Committee on Animal Nutrition. *Nutrient Requirements of Swine, Revised 1959.* Washington, 1959. (NAS–NRC Publication 648. Agricultural Board, Nutrient Requirements of Domestic Animals No. 2.) 34 p., illus. $1.00.

National Research Council. Committee on Atmospheric Sciences. *The Status of Research and Manpower in Meteorology.* Washington, 1960. (NAS–NRC Publication 754.) 13 p.

National Research Council. Committee on Scope and Conduct of Materials Research. *More Effective Organization and Administration of Materials Research and Development for National Security. A Report to Detlev W. Bronk, President, National Academy of Sciences . . .* Washington, 1960. (NAS–NRC Publication 718.) 30 p. $1.00.

National Research Council. Food Protection Committee. *Principles and Procedures for Evaluating the Safety of Food Additives . . . December 1959.* Washington, 1960. (NAS–NRC Publication 750.) 9 p.

National Research Council. Food Protection Committee. *Problems in the Evaluation of Carcinogenic Hazard from the Use of Food Additives . . . December 1959.* Washington, 1960. (NAS–NRC Publication 749.) 44 p. $1.00.

National Research Council. Highway Research Board. *Landslide and Foundation Investigations and Stability Analysis . . .* Washington, 1960. (NAS–NRC Publication 699. Highway Research Board Bulletin 236.) 68 p., illus. $1.20.

National Research Council. Highway Research Board. *Proceedings of the Thirty-Eighth Annual Meeting, Washington, D.C., January 5–9, 1959.* Washington, 1959. (NAS–NRC Publication 674.) $10.00.

National Research Council. Highway Research Board. *Traffic Behavior on Freeways . . .* Washington, 1960. (NAS–NRC Publication 698. Highway Research Board Bulletin 235.) 132 p., illus. $2.40.

National Research Council. Maritime Cargo Transportation Conference. *Research Techniques in Maritime Transportation. Proceedings of the Third Symposium . . . 13 May 1959, Washington, D.C.* Washington, 1959. (NAS–NRC Publication 720.) 118 p. $2.00.

Nunley, Robert E. *The Distribution of Population in Costa Rica.* Washington, 1960. (NAS–NRC Publication 743. Division of Earth Sciences, Foreign Field Research Program, Report No. 8.) 71 p. $2.00.

Notice of Academy Meetings

NATIONAL ACADEMY OF SCIENCES

Annual Meeting, Washington, D. C., April 25–27, 1960

NATIONAL ACADEMY OF SCIENCES–NATIONAL RESEARCH COUNCIL

Governing Board, Washington, D. C., April 24, 1960

Governing Board, Washington, D. C., June 12, 1960

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The search for Truth is in one way hard and in another easy. For it is evident that no one can master it fully nor miss it wholly. But each adds a little to our knowledge of Nature, and from all the facts assembled there arises a certain grandeur.

—ARISTOTLE

VOL. I